

## Eco Mark Product Category No. 141

# “Biodegradable Plastic Products Version 1.0” Certification Criteria

—Applicable Scope—

- A. Materials for agriculture and forestry
- B. Materials for horticulture and plantation
- C. Materials for composting

Established: July 2, 2007  
Term of validity: June 30, 2012

Japan Environment Association  
Eco Mark Office

## Eco Mark Product Category No.141 “Biodegradable Plastic Products Version 1.0”

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## 1. Applicable scope

### A. Materials for agriculture and forestry

Mulching film for agriculture, seeding raising pot, guide string/net for climbing plants, net for agriculture and forestry (including animal net, bird net, insect screen), forestry tape

### B. Materials for horticulture and plantation

Vegetation sheet, bracing (anchor pin, etc.)

### C. Materials for composting

Compost bag (including those for business and for household), net for kitchen sink

## 2. Certification Criteria and Certification Procedures

### 2-1. Environmental Criteria and Certification Procedures

(1) The Product shall consist solely of biodegradable materials and metals or other materials shall not be used. In addition, for biodegradable materials, biodegradable plastic (including additives, fillers and the like) shall be used 50% and over.

**【Certification Procedures】**

The compositions of the product by materials and their respective weights shall be shown in the Attached Certificate.

(2) If the Product uses as its raw material any plant-derived biodegradable plastic, the farmland and the mode of production of the raw material shall not be such that would adversely affect the local ecological system.

**【Certification Procedures】**

The Attached Certificate shall indicate that the farmland in which the raw material is cultivated was not converted from natural landscape in less than ten years prior to the date of application.

(3) The Product shall have biodegradability of 60% and over within six months according to JIS K 6950/6951/6953 or ISO 14851/14852/14855. In the event the biodegradability test is conducted for each material, however, every material shall satisfy the above criterion independently. Furthermore, organic additives shall have a biodegradability of 60% and over within 28 days according to OECD 301C (modified MITI method). Any material that accounts for less than 1% by weight shall be exempted from biodegradability test, and the aggregate total weights of such materials shall not exceed 5% by weight of the Product. For inorganic additives, biodegradability tests are not applicable.

**【Certification Procedures】**

The grouping of materials for each of which the degradability test was conducted shall be clarified and the test results showing conformance to the above criterion shall be submitted. The grouping of materials shall be at the discretion of the applicant. The names, respective weights and the ratios to the total weight of the Product of organic materials exempted from the biodegradability test shall be shown.

(4) Regarding “C. Materials for composting”, it shall be certified that the product does not disturb composting.

**【Certification Procedures】**

It shall be indicated that the degradability of the product does not disturb composting. Methods for confirmation are according to ISO 16929, ISO 20200 or ASTM D6002, etc.

(5) The Product shall conform to the standard values (weight, thickness, etc.) per functional unit that are shown in Attached Table 1.

**【Certification Procedures】**

The standard value of Product per functional unit shall be indicated in the Attachment to show conformance to the standard value.

(6) In the course of production of the Product, any applicable environmental laws and regulations as well as pollution prevention agreements shall be observed with respect to air pollution, water contamination, noise, vibration, obnoxious odor, emission of hazardous substances.

**【Certification Procedures】**

A self-certificate issued by the general manager of the plant in which the Product is produced shall be submitted declaring that the environmental laws and regulations and the like locally applicable to the plant site have been duly

observed and no violation cases have taken place during the five-year period preceding the date of application.

- (7) The Product shall meet the upper limit value of heavy metal contents listed in Attached Table 2.

**【Certification Procedures】**

Test results on heavy metal contents or a certificate certifying that the heavy metals listed in Attached Table 2 are not contained in any of the materials used in the Product shall be submitted.

- (8) “A. Materials for agriculture and forestry” and “C. Materials for composting” shall not produce environmental toxicity (harm to plants) caused by the biodegradation. In specific terms, the Product shall be mixed with compost or soil (“sample fertilizer”), which shall be mixed with two or more kinds of blank soil (“sample soil”). Tests shall be conducted according to the Notice by the Director General of the Bureau of Agriculture, Sericulture and Horticulture of the Ministry of Agriculture, Forestry and Fisheries (59 Nosan No.1943) “Method of Cultivation Test on Harm to Plants.” No adverse effect upon the germination ratio or growth of *Brassica rapa* var. *peruviridis* (“sample crop”) shall be observed. For the item which is different from the conditions of “Method of Cultivation Test on Harm to Plants” on the above, such as the mixed amount of biodegradable plastics, the type of blank soil, etc., it shall follow the Attached Table 3.

**【Certification Procedures】**

A test shall be conducted according to 59 Nosan No.1943, and test results shall be submitted.

- (9) Attention shall have been paid to the weight reduction and recycling of the Product packaging. If plastic materials are used for packaging, the polymer skeleton shall not include any halogens as formulation ingredient.

**【Certification Procedures】**

A detailed description of the Product packaging as well as the packaging materials and their raw materials shall be made in the Attachment. It may be supplemented by photographs and illustrations.

- (10) The Product for Applicable scope “C. Materials for composting --- net for kitchen sink” shall be 1.5mm or smaller mesh and shall not be of a design that would be substantially detrimental to its dehydrating function (such as an excessively small number of mesh openings).

**【Certification Procedures】**

The size of mesh openings and the results of mesh size test shown in Attached Table 4 shall be mentioned in the Attached Certificate.

(11) The user handbook or catalog shall contain descriptions about the items (a) through (d) below with respect to the method to use the Product. In the event the Product is packaged, the package shall contain descriptions about the items (a), (c) and (d) below.

- (a) This is a product made of biodegradable plastic and will biodegrade itself if the place and method of use referred to in (c) below is observed;
- (b) The minimum duration during which the Product can display its intended performance if properly used;
- (c) The proper place and use method of the Product (the method of construction as well, if the Product is a material for horticulture and plantation);
- (d) That non-compliance with the use method referred to in above (c) could constitute illegal dumping and other violations of laws, resulting in penalties.

**【Certification Procedures】**

Users handbook (or its photocopy) that describes the use method of the Product shall be submitted.

**4-2. Quality Criteria and Certification Procedures**

(12) The Product quality shall conform to any applicable JIS standard, voluntary standards of the industry or the like. Sufficient quality control shall be made during the manufacturing step. Based on the in-house standards of “B. Materials for horticulture and plantation - vegetation sheet,” the quality and safety of the Product shall have been confirmed by a public test organization using a publicly accepted test method.

**【Certification Procedures】**

A certificate certifying conformance to the applicable quality standards shall be submitted. In addition, a certificate issued by the general manager of the plant in which the Product is manufactured shall be submitted certifying that sufficient quality control has been made during the manufacturing step and no violations have been committed.

Established: July 2, 2007

The present Certification Criteria for the Product Category will be revised when necessary.

**Attached Table 1 The standard value of product per functional unit**

Large classification	Small classification	Functional unit	Standard value per unit	
Materials for agriculture and forestry	Mulching film for agriculture	Average thickness	30 [ $\mu$ ] or less	
	Seedling raising pot	1-pot weight	A [g/pot] or less A = 2×B-10 A : 1-pot weight (g) B : pot diameter (cm)	
	Guide string/net for climbing plants	String	Weight per length	1.7 [g/m] or less
		Net	Length on a side of a mesh Weight	180-240 [mm] Explanation not to use large amount of materials compared to the non-biodegradable conventional product
	Net for agriculture	Insect net	Length on a side of a mesh	0.3-9 [mm]
		Bird net	Length on a side of a mesh	4-75 [mm]
		Animal net	Length on a side of a mesh	4-150 [mm]
	Net for agriculture and forestry	Insect net Bird net Animal net	Weight	Explanation not to use large amount of materials compared to the non-biodegradable conventional product
	Forestry tape		Not available	Not available
	Materials for horticulture and plantation	Vegetation sheet	Not available	Not available
Bracing		Not available	Not available	
Materials for composting	Compost bag	Average thickness per bag	A [ $\mu$ /bag] or less A = 0.8×B+17 A : Average thickness ( $\mu$ ) B : Capacity of bag (L)	
	Net for kitchen sink	Not available	Not available	

**Attached Table 2 Upper limit value of contained amount of heavy metals**

Heavy metal	Contained amount [mg/kg]	Heavy metal	Contained amount [mg/kg]
Arsenic	3.5	Nickel	25
Lead	30	Zink	150
Cadmium	0.5	Molybdenum	1
Mercury	0.5	Selenium	0.75
Chromium	50	Fluorine	100
Copper	37.5		

**Attached Table 3 Items which are different from the conditions of “Method of Cultivation Test on Harm to Plants”**

Applicable item		Remarks in this Product Category
1 Container for testing	(1) Container	* Three or more consecutive containers per testing plot
	(2) Test fertilizer, etc.	* No use of test fertilizer, but use soil/compost mixed with biodegradable plastic(product) * The mixing ratio of the product shall be 5% to the weight of soil or compost. * Regarding materials for agriculture and forestry, the product shall be mixed with the same soil as test soil. * Regarding materials for compost, the product shall be mixed with compost (JIS K 6953) .
	(3) Test soil	* Use two types of soil (Kuroboku-soil, non Kuroboku-soil).
2. Procedure for testing	(2) Fertilizer adjusting	* Soil or compost mixed with biodegradable plastic shall be crushed to the size going through 2 mm-sand strainer.
	(3) Fertilizer application	* For application, standard amount only
3. Survey item	Attached table	* Leaf color (SPAD value) shall also be surveyed.

#### Attached Table 4 Test method for mesh size of net for kitchen sink

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| <p>□ Appliance used for test</p> <ol style="list-style-type: none"> <li>1) Beads used for test <ul style="list-style-type: none"> <li>• Commercial glass beads (without hole) or abrasive glass beads (1.5mm diameter)</li> <li>• Choose beads which go through 1.6mm-mesh strainer and do not go through 1.4mm-mesh strainer, with use of the strainer (made by metal) prescribed in JIS Z 8801.</li> <li>• Beads shall wash before test and dry well (105°C/3hours in a drier).</li> </ul> </li> <li>2) Net for kitchen sink (applied product) and the container to use net for kitchen sink, etc. <ul style="list-style-type: none"> <li>* Containers, etc. shall be applicable size of the net for kitchen sink.</li> </ul> </li> <li>3) Beaker with 500ml or more capacity (or other containers with which 500ml can be measured)</li> </ol> <p>□ Test method</p> <ol style="list-style-type: none"> <li>1) In a 500ml-beaker, add 50g of 1.5mm-beads and water to be 500ml in total.</li> <li>2) Filter the mixed water in the beaker by a net for kitchen sink.</li> <li>3) In case beads remain in the beaker, add additional 500ml of water, and repeat the procedure 2) at least twice, and filter the all beads in the beaker.</li> <li>4) Dry beads inside the net for kitchen sink, and measure their weight in room temperature.</li> </ol> <p>□ Confirmation of test results</p> <ol style="list-style-type: none"> <li>1) Repeat test and measurement five times, and take an average value of three measurements (excluding the maximum and minimum value). Test result refers to the average value.</li> <li>2) If the product satisfies the following condition as a test result, it is regarded as corresponding to the “Certification Criteria item (10)”: the total weight of beads remaining in the net for kitchen sink is 95% or over to the total weight of all beads used for the test.</li> </ol> <p>□ Others</p> <ol style="list-style-type: none"> <li>1) For a test, it is preferable to use laboratory-use glass beads with its specific gravity (2.5 to 2.8).</li> <li>2) JIS Z 8801 “Test strainer (1)-(3)</li> </ol> |
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